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Weapons, Crime, and Violence in America

Executive Summary

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James L. Underwood
Acting Director

Weapons, Crime, and Violence in America

Executive Summary

by
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November 1981

U.S. Department of Justice
National Institute of Justice

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ABSTRACT

This Summary highlights key findings, results, and recommendations from a two-year research study on "weapons and violent crime" conducted by the Social and Demographic Research Institute, University of Massachusetts, Amherst. The project consisted of three major parts: a comprehensive review of existing literature and an accompanying annotated bibliography; a survey focused on weapons and crime data gathered and archived by the United States police; and an analysis of the effects of weapons use on felony case disposition in Los Angeles.

I. The Literature Review. The review covers all major research literatures related to weapons and weapons use in the United States, both licit and illicit. The existing stock of private firearms (as of 1978) is estimated at 120 ± 20 million guns, an increase of some 40 million over ten years. Growth in the number of US households, increased sport and recreational demand, additional weapons purchases by families already owning one or more guns, and enhanced small arms demand among the US police appear to account for most or all of the 40 million gun increase. Despite a common hypothesis, there is no good evidence that the fear of crime and violence was a very important factor.

Roughly three-quarters of the private firearms stock is owned primarily for sport and recreation; the remainder, for protection and self-defense. Ownership for sport and recreation is essentially a cultural phenomenon, a product of early childhood socialization. Relative to non-owners, gun owners tend to be male, rural, Southern, Protestant, affluent, and middle class.

There appear to be no strong causal connections between private gun ownership and the crime rate. Crime may be a motivating factor in the purchase of some protective weapons, but these constitute no more than about a quarter of the total private stock. There is no compelling evidence that private weaponry is an important cause of, or a deterrent to, violent criminality.

Over the past two decades, the trend in all categories of violent crime is upward. Crime rates peaked in the early 1970's and have been more or less stable since (through 1978). Approximately 30,000 deaths occur annually as the result of accidental, homicidal, or suicidal uses of guns. Studies of "crime guns" confiscated by police confirm that they are predominantly handguns; a sizable fraction enter criminal channels through theft from residences; many are found to have crossed state lines before their use in crime.

It is commonly hypothesized that much criminal violence, especially homicide, occurs simply because the means of lethal violence (firearms) are readily at hand, and thus, that much homicide would not occur were firearms generally less available. There is no persuasive evidence that supports this view.

Majorities of the US population have favored licensing or registration of private firearms, especially handguns, for as long as pollsters have asked the question. Measures substantially more strict than these (for example, bans on the ownership of handguns), however, do not enjoy majority support.

There are roughly 20,000 "gun laws" already on the books; the wide variability of provisions across jurisdictions tends to vitiate the effects of these laws. In general, evaluation studies of the effects of gun laws on crime tend to show that these effects are modest or non-existent, although there are some apparent exceptions to this conclusion.

II. The Police Department Survey. A probability sample of US police departments was surveyed by mail; the response rate was approximately 70%. All departments generate extensive and detailed information on weapons use in crime, and most departments see weapons crime as an important part of their overall crime problem. Most departments now gather and maintain, in some form, the data necessary to generate annual statistical reports on gun crime in their jurisdictions. However, the data gathering and management practices in some departments are highly inefficient towards this end, and in general, departments are not enthusiastic about additional reporting requirements. Most departments have direct access to, and make frequent use of, the NCIC weapons tracing service; usage of the BATF system, in contrast, is rare. In general, we conclude that police records on weapons and crime are a potentially fruitful and, so far, underexploited resource for weapons and crime information.

III. The Los Angeles Study. The project acquired Prosecutor's Management Information System (PROMIS) data from Los Angeles on ~80,000 felony arrests for an eighteen-month period. About 14% of these felonies involved a gun; an additional ten percent involved some other weapon. Holding other relevant variables constant, we find that gun offenders receive harsher treatment at all stages of court processing: they are less likely to be dismissed at initial screening, more likely to be arraigned and formally charged, and, upon conviction, tend to receive substantially longer prison sentences. These findings generally replicate the Cook-Nagin (1979) study of weapons offenders in the Washington, DC courts.

Weapons and Violent Crime: Executive Summary

I. Foreword

In 1979 and 1980, the Social and Demographic Research Institute (University of Massachusetts, Amherst), under a grant from the U.S. Department of Justice, conducted a broad-ranging research project on the topic of weapons, crime, and violence in the contemporary United States. Findings, results, and recommendations from the project are contained in a series of four Research Reports:

I. James Wright, Peter Rossi, Kathy Daly, and Eleanor Weber-Burdin. Weapons, Crime and Violence in America: A Literature Review and Research Agenda.

II. James Wright, Huey Chen, Joseph Pereira, Kathy Daly, and Peter Rossi. Weapons, Crime, and Violence in America: An Annotated Bibliography.

III. Eleanor Weber-Burdin, Peter Rossi, James Wright, and Kathy Daly. Weapons Policies: A Survey of Police Department Practices Concerning Weapons and Related Issues.

IV. Peter Rossi, Eleanor Weber-Burdin, and Huey Chen. Effects of Weapons Use on Felony Case Disposition: An Analysis of Evidence from the Los Angeles PROMIS System.

Here, we summarize the design and rationale for the project as a whole, discuss the main research findings, and highlight the conclusions and recommendations set forth in the various Research Reports.

Several notes of caution regarding this Summary are in order. First, the Summary is a representation in about forty pages of a set of reports that run, in total, to well over a thousand pages. What is said here, in short, is very much less than what needs to be said about all topics covered. This Summary is thus adequate as a map to the contents of the Research Reports, but not as a substitute for them.

Most of the empirical findings discussed here are distillations from the reported results obtained in other research. In a few cases, the available research converges quickly and sharply on a substantive conclusion; in most cases it does not. Indeed, contradictory evidence

and inconsistent interpretations of evidence are distinguishing characteristics of this literature. In all cases, the conclusions summarized here are those we find most justifiable given the present state of knowledge and research. In many cases, however, the band of uncertainty around these conclusions is quite broad.

While the existing literature on weapons, crime, and violence is voluminous, many important topics have not been adequately researched, and some have not been researched at all. For this reason, many of our conclusions are cast in essentially negative terms; for example, "There is no compelling evidence that..." or "There is little empirical support for the idea that..." It is therefore critical to emphasize that the absence of evidence cannot be taken as evidence of absence, a well-known although often forgotten methodological point.

To illustrate, we conclude that there is little or no compelling evidence to support the hypothesis that the recent increase in private armament in the US has been a result of fears about crime and violence. This is not to conclude that fear of crime and violence played no role in the "domestic arms buildup," but rather that no one has yet shown this to have been the case. There is every difference between concluding that the appropriate research has not been conducted, and concluding that appropriate research was done but reported negative results. It is a serious error to mistake the former conclusion for the latter.

"What to do about guns" and "what to do about crime" are hotly contested, indeed inflammatory, political issues, and no abount of scholarly research, however well-conceived, will ever lay them to rest. In the conduct of this project, we have tried to put aside our own biases and give all the evidence on both sides a fair and impartial hearing. For the record, one of us (Wright) has previous publications that reflect a fairly obvious pro-gun-control stance.[1] At least some reviewers of the present project claim to detect the same bias here. Indeed, one found "an anti-gun bias which slips in constantly" that "overrides logic and professional objectivity." At the same time, other reviewers have reported considerable distress about the apparent "pro-gun bias" in our present reports. That reviewers "detecting" the anti-gun bias have all been strongly affiliated with the pro-gun lobby, and those "detecting" the pro-gun bias all strongly affiliated with the anti-gun lobby, suggest to us that we have probably come closer to an objective treatment than ideologues on either side are willing to admit.

Readers looking for recommendations about firearms or crime policies at either local, state, or Federal levels will be disappointed. It is neither our purpose nor our expertise to "advise" on matters of national policy in these areas. Our purpose, rather, was to evaluate

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[1] See "Who Owns the Sidearms? The Demography of Gun Control," The Nation 221:8 (September 21, 1975), pp. 241-244.

the existing stock of information about weapons, crime, and violence in the society, to note the conclusions that seem adequately supported by existing research and those that do not, and to recommend to the National Institute of Justice an agenda for future research in the area. Thus, this Summary, and the Research Reports on which it is based, are oriented more heavily towards research than towards social policy issues. We review in great detail studies of the effects of laws that have been passed before, and we review the existing poll evidence on what laws the public think ought to be passed, but we do not make any recommendations about what laws we think ought to be passed or about any other aspect of firearms and crime policy.

II. Overview of the Project

The control of civilian armament and the control of crime and violence in the society are important public policy issues. Here as elsewhere, policy formation and implementation are best undertaken from a sound information base. This is especially true in policy areas that are highly politicized and hotly contested, as in the present case. When the lines of political battle are sharply drawn, society runs the risk of basing policies on emotive imagery and facile assumptions, and in the process, needlessly alienating some segments of the population while at the same time failing to achieve the intended policy effects. The overriding purpose of the "Weapons and Violent Crime" project was thus to assemble, from existing sources, as complete and accurate an information base as the present state of the research art allows.

In brief, the aim of the project was to take stock of what is now known about the relationships, if any, among weapons, crime and violence, to assess the possible utility of alternate sources of evidence on these relationships, and to prepare a research agenda that would close the more gaping holes in present knowledge.

This stock-taking effort proceeded along three separate, although interrelated, lines. First, we undertook an exhaustive review of the existing scientific and research literature in this area. Our intention was to compile virtually all existing published evidence on the issues of weapons, violence, and crime. Thus, the review deals with topics ranging from the numbers of civilian firearms to what is presently known about the motivations of violent offenders and the relationship between these motivations and the lethality of violent attacks, to the relationship between weapons regulations and rates of criminal violence.

In general, for reasons we explain below, the published literature is more noteworthy for what it does <u>not</u> show than for what it does. There is, it appears, scarcely a single finding in the literature that could be said to have been indisputably established. In part, this reflects the highly politicized nature of research in this area, but perhaps more importantly, it results from a near-total absence of sound and nationally generalizable data from which reliable information about weapons, crime, and violence might be extracted. A second aim of the project was thus to explore the possible research utility of two sources of information on weapons and crime that have not been exploited to any great degree in past research, namely, information gathered by the police and the courts.

Police records represent a potentially vast source of information on the uses of weapons in crime -- at least, on the uses of weapons in crimes known to the police. It is self-evident that the use of weaponry in crime is a matter to which the police are attentive, and thus, that immense amounts of information already exist in police records. The

key questions of concern to the project were the form in which this information is stored, its completeness and availability, and the ease with which it could be accessed and analyzed for research purposes.

In order to answer these questions, we conducted a survey of the US police, focused on their information-gathering, information-recording, and data base management policies in the weapons and crime area. The survey is based on a stratified probability sample, and the results, when appropriately weighted, thus generalize to the total policing effort in the United States.

The courts, like the police, also gather and record much information on weapons use in crime, and these data thus represent an additional possible source of research material. This is especially likely to be true now that a standardized information management system (called Prosecutor's Management Information System, or PROMIS) has been developed and installed in a large and increasing number of District Attorneys' offices all over the United States. The third part of the project thus involved an assessment of the utility of the PROMIS data for research on weapons and crime.

To this end, PROMIS data from the Los Angeles Superior Court were obtained and analyzed. The original design called for analysis of PROMIS data from several (up to five) sites, but for various reasons, this proved impossible and, in the end, only the Los Angeles data were acquired.

The Los Angeles data record information on nearly 80,000 felony cases processed through the court in 1977 and 1978. There is detailed information present in the data on each case, including prior criminal record of the offender, characteristics of the victim, information about witnesses, and so on. There is, in addition, one variable that denotes whether a gun or other weapon was possessed at the time of the offense. It is therefore possible to use these data to estimate the proportional usage of weaponry in various categories of crime and to assess the effects of weapons usage on case disposition (for example, dismissal, referral to a lower court, sentence severity, etc.).

In general, none of the three sources of data employed in this project (the published literature, data from the police, and PROMIS data) are as useful or as complete as would be desirable. Much of the published research is methodologically flawed or of uncertain generalizability, and there are many important topics that have scarcely been researched at all. Weapons data from the police, while potentially of great use, are sometimes not kept in a form that would facilitate information retrieval and analysis, and there is considerable variance from department to department in the nature and completeness of the data that are recorded. Finally, the PROMIS data, while easily transferred and analyzed (the PROMIS data are fully computerized), contain

very limited weapons information (recording only that a weapon was used, but no information about its type, whether it was fired, brandished, or merely possessed, and so on) and allow one to research only a highly restricted range of topics -- ones, moreover, that are not among the more pressing or critical. The major conclusion of our efforts is thus that the information cupboard, while not entirely bare, is certainly not well-stocked or amply supplied.

One important implication of this conclusion is that existing knowledge about weapons, crime, and the relationship between them is, in general, not adequate as a basis for policy formulation. Even the most basic descriptive questions -- for example, the actual number of firearms in private hands, or the crime reduction effects, if any, of weapons measures enacted in the past -- remain essentially unanswered to any useful degree of precision. Thus, the weapons and crime area is one, among many, where important policy decisions are being made in what amounts to an information vacuum. In order to enhance most effectively the information base upon which sensible and appropriate weapons and crime measures might be erected, two closely related questions must be posed: What information do we need in order to formulate effective policy? And how is that necessary information best obtained? Our thoughts along these lines are contained in the final product of the project, the research agenda we propose for future study of weapons and crime issues.

III. The Literature Review

Private Weapons Ownership: Extent and Trends

Our review of the literature on weapons, crime, and violence begins with an assessment of what is currently known about the existing stock of private armament among the US population. In general, two methods have been used to estimate the total firearms supply: compilations of production and import data, and estimates generated from national surveys containing a weapons ownership question. Although much is made in the literature of the apparent "disparity" in the ensuing estimates, reconsideration of the assumptions that go into each, and the appropriate recalculations, show that both methods tend to converge on common values. In 1968, we estimate, there were roughly 80 ± 20 million guns in private hands, and in 1978, roughly 120 ± 20 million guns. In both years, handguns account for about 25-30% of the total weaponry, and shoulder weapons for the remainder. Thus, the total number of weapons in private hands has sharply increased over the past decade(s), by an estimated 40 million guns. Further, the growth in handguns appears to have been disproportionately high.

What accounts for this increase? One often overlooked factor in the "domestic arms buildup" is the simple matter of growth in the number of US households. In 1968, there were about 60 million US households, and in 1978, about 75 million -- a 25% increase over ten years. (The gorwth in households was much sharper than the growth of population owing, mainly, to the maturation to household formation age of the post-war "baby boom" generations.) In order to maintain a constant average density of weapons ownership across families, then, a direct implication is that the total firearms supply would also have had to increase by 25% over the decade, just to keep pace with the growth in the number of households. Since the existing 1968 supply is estimated at 80 million firearms, a 25% increase would amount to (.25) x (80 million) = 20 million "new" firearms necessary to supply the weapons demand of 15 million "new" families; and this amounts to approximately one-half of the net projected growth of 40 million guns. Net of household increase, then, there remain approximately 20 million "new" guns to be accounted for by other factors. Further data and calculations suggest that about 10 million of these are handguns and the remaining 10 million are rifles and shotguns.

Some fraction of the remaining weapons excess must be attributed to enhanced sport and recreational demand for firearms, since the various shooting sports have grown considerably in appeal over the past years (as have all other forms of outdoor recreation). Data on sport and recreational weapons use are extremely thin and spotty. Inferences based on the annual number of hunting licenses issued, however, suggest a net increase of about 5.4 million "new" hunters between 1968 and 1978, and a further increase of perhaps 1.8 million other sports shooters, and these estimates give a net growth in sport and recreational demand amounting to some 7.2 million people with a "legitimate" need for firearms. (All the above estimates are based on growth over and beyond that expected just on the basis of population growth.)

Discounting the net remaining "new" weapons for this source of new demand requires an estimate of the rate at which "new" hunters and sports shooters arm themselves. If they each acquired one and only one firearm, the net demand growth would thus be for some 7.2 million guns, or roughly a third of the net remaining excess weapons. If, on the other hand, they arm themselves at the average rate for US families possessing at least one firearm (the best estimate of this average is 3.17 firearms per weapons-owning family), then the growth in sport and recreational demand would amount to about 22.8 million weapons, or 100% of the net remaining excess. Plausible compromise values imply a net sport and recreational demand growth that accounts for all (or nearly all) of the remaining excess shoulder weapons and perhaps a third to a half of the net excess handguns.

The preceding estimates attribute roughly 5 million new handguns to growth in sport and recreational demand for weapons in the decade 1968 to 1978, and this thus contradicts the common claim that handguns have "no legitimate sport or recreational use." In point of fact, no credible study of sport and recreational handgun use has ever been conducted, and the few fragments of evidence that do exist strongly suggest that handguns are as likely to be owned for sport and recreation as for any other reason.

Factoring out the weapons increases attributable to growth in the number of households and growth in sport and recreational demand therefore leaves no more than about 5-8 million handguns to be ascribed to other factors.

Another possibly large source of enhanced demand is growth in the police demand for armament. Strictly speaking, police arms are not "civilian" arms, but there are two important reasons to factor police arms out of the trends. First, the existing supply-side estimates exclude weapons manufactured for the military, but not weapons shipped to Federal, state, or local police; thus, the police demand for arms is reflected in the supply-side trend data. Secondly, in contrast to a common assumption, many policemen supply their own sidearms (for example, 17 of the 50 largest departments in the United States do not provide sidearms for their officers, and outside the largest fifty, the fraction must be considerably higher), and thus, much of the police demand for arms is satisfied through the private firearms market.

Evidence from several sources shows a large increase in the total number of armed public servants over the period 1968-1978, and there has apparently been a parallel increase in private security forces. In addition, there is some evidence to suggest considerable police department experimentation with new small arms policies in the past decade. Both the personnel trend and the arms policy trend would tend to increase police consumption of firearms by a sizable amount. Our analyses suggest that police demand for new arms accounts for perhaps 2-3 million of the remaining handguns and some unknown number of shoulder weapons. This leaves no more than about 5 million handguns

to be accounted for by other factors.

The most commonly offered explanation for the private arms buildup is that it has resulted from increasing "fear of crime, violence, and civil disorder" (Newton and Zimring, 1969). There are several compelling reasons to doubt whether this source of demand for firearms was at all substantial during the decade:

(i) Once the other factors discussed above have been taken into account, there are few or no remaining excess weapons to be explained by other factors, such as fear of crime and violence. If the estimates cited above are plausible, the overall "fear" demand does not amount to more than a few (perhaps five) million handguns.

(ii) Available studies, summarized below, show that about three-quarters of all weapons are owned mainly for sport and recreation, and about one-quarter for protection and self-defense. Assuming these proprotions hold over the time series as well as in the cross-section, then the demand for protective weapons would amount to roughly a quarter of the 20 million firearms remaining once household increase has been factored out, and this approach also gives a "fear" demand in the range of a few million.

(iii) National surveys have asked a gun ownership question periodically since 1959 (Wright and Marston, 1975). The proportion of US families claiming to possess a firearm has been about constant, at roughly 50%, but the fractional ownership of handguns among families owning any weapon has increased. An analysis of this increase shows it to have been concentrated mainly in middle-sized cities, whereas the increases in fear of crime and violence have largely been big-city phenomena (e.g., Stinchcombe et al., 1980).

(iv) Point (iii) further implies that most of the net remaining handguns have been purchased by families already possessing one or more firearms. (If the increase in handguns was due to handgun purchases among families otherwise owning no weapons, then one would expect the proportion of families owning any gun to increase, which it has not.) To be sure, these handgun purchases may well have been motivated by fear of crime and violence, but they would, in this case, be handguns added to an existing firearms stock, that is, weapons purchased by families that have routinely owned firearms and who are thus, or so one presumes, familiar and comfortable with them (as opposed to first-time purchases by previously unarmed families).

(v) Finally, several studies have inquired directly into "fear and loathing" as a source of the recent arms trend, and few of them demonstrate any decisive or substantial "fear and loathing" effect. For example, one study (Northwood, Westgard, and Barb, 1978) analyzed permits to carry a concealed weapon in Seattle and reports that less than 20% of the applicants "claim prior victimization as a reason."

The same study showed that there was no relationship between crime rates and permit applications across Census tracts. Similarly, a study of Illinois counties (Bordua and Lizotte, 1979) found that no measure of the county crime rate was significantly related to the number of Firearms Owner's Identification Cards for males or minors. (There was some apparent effect on womens' ownership, however.) Clotfelter's (1977) time-series analysis of handgun demand can also be mentioned; this study found that rates of violent crime had no significant effect on handgun demand.

We conclude that there is little empirical support for the idea that the recent domestic arms buildup has been in reaction to fears of crime, violence, or civil disorder. At the outside, this source of demand amounts to perhaps five million handguns overall and is thus a minor factor in the overall weapons trend.

Characteristics and Motives of Firearms Owners

All available evidence on characteristics of private weapons owners confirms that most private weaponry is owned primarily for sport and recreational uses. In the total, sport and recreational guns apparently outnumber protection guns by about 3 to 1. Even among handgun owners, sport and recreation are mentioned as primary ownership reasons at least as often as protection or self-defense. (See, for example, Lizotte and Bordua, 1980; or DMI, 1978.) Weapons ownership varies sharply by region and city size, being higher in the South and West than in other regions, and is sharply higher in rural than in urban places. Contrary to a common speculation, gun ownership also increases with social status (Wright and Marston, 1975). Also, Protestants are sharply more likely to own a gun than either Catholics or Jews; and men are, of course, much more likely to own a gun than women, although women's ownership appears to be increasing.

There is substantial evidence that early parental socialization is an important factor in weapons ownership among adults, especially sport and recreational ownership. In all relevant studies, whether one's father owned a gun is the single best predictor of whether the respondent owns a gun.

One study (Lizotte and Bordua, 1980) allows for a direct differentiation between sport and defensive weapons owners and suggests that these are qualitatively different types. Sport ownership is largely a function of early socialization into a "sporting gun culture," as suggested above. Gun ownership for protection, however, is entirely different; in this study, the only significant predictor of defensive ownership was the violent crime rate in the county of residence. (Concerning the implication of this finding for our previous conclusion about the effects of "fear" on the overall trend, it must be recalled that only a fourth of the respondents in this study were classified as "defensive owners." Further, while "county violent crime" was the only significant, and therefore best, predictor of defensive

ownership, the magnitude of this effect was relatively small.)

Private Weapons Ownership and Violent Crime

What relationships, if any, exist between the incidence of private weaponry and rates of violent crime? Three hypotheses have been offered in this connection: that private gun ownership is an effect of (or reaction to) criminal violence; that private gun ownership is a cause of criminal violence; and that private weapons ownership is a deterrent to criminal violence.

The first of these has been considered above. Certainly, at least some private weapons are possessed in reaction to crime or the fear of crime, but the analyses summarized above suggest that the relative fraction is small. Most firearms (roughly three-quarters of the total) are owned for entirely different reasons. If there is any noteworthy relationship of this general sort, it is clearly a more complicated matter than simply, "get victimized, buy a gun." In fact, most relevant studies in the literature show no significant relationship between criminal victimization and gun ownership.

Although there is much speculation, surprisingly little research has been done on firearms as a cause of criminal violence. Most studies depend on gross comparisons of crime and weapons ownership rates across large and heterogeneous geographical aggregates (nations, regions, states, or counties) that differ in far too many (typically uncontrolled) ways for much of substance to be concluded from the results. Truly decisive evidence -- for example, evidence on the ensuing criminality of persons who acquire firearms -- does not exist. We conclude that there is little evidence to show that gun ownership among the population as a whole is, per se, an important cause of criminal violence.

Whether private firearms are an important deterrent to crime is likewise uncertain. It is clear that much crime occurs in circumstances where the victim's ownership of a gun would be irrelevant, for example, burglaries of unoccupied residences, but this says nothing about the effectiveness of weaponry as a deterrent in situations where the crime is potentially deterrable, for example, burglaries of armed and occupied residences. There is some evidence (Kleck, 1979) that the risk to a robber or burglar of being shot by the intended victim is about the same as the risk of being apprehended, convicted, and imprisoned (both probabilities are on the order of 1-2%). It is thus plausible that some crime is "deterred" because those who would otherwise commit it fear the possibility of being shot, just as it is plausible that the fear of doing time for one's offense also deters some crime.

Evidence on the uses of firearms by victims in crimes that are potentially deterrable suggests that the probability of a "successful" victimization goes down, but the probability of injury or death to the

victim goes up, if one uses a gun (or any other physical means of resistance) in protection (e.g., Cook, 1976).

As noted above, roughly 25% of the total private armament (and 40-50% of the handguns) are owned primarily for protection or self-defense. Survey evidence for 1978 shows that some 15% of the population (or members of their households) have used a gun in self-defense at some time, of which about half was in defense against animals. Also, about 7% of the nation's adults say they carry handguns with them for protection outside the home. The proportion of US adults who have actually fired a gun in self-defense appears to lie somewhere between 2 and 6%.

The Magnitude of the Crime and Violence Problem

How much crime and violence is there in the society? Uniform Crime Report (UCR) data for the index crimes of homicide, robbery, and aggravated assault all show the same general pattern: namely, fairly sharp increases from about 1960 up through the early seventies, a peak in the rates occurring about 1974, and approximate stability in the years since (through 1978). Between 1960 and 1978, the homicide rate increased from about 5 to 9 homicides per 100,000 population. The percentage of homicides committed with firearms also increased from 53% to 63%. Of the homicides committed with firearms, approximately three-quarters involve handguns.

The number of robberies also increased roughly four-fold over the two decades. Of the total, somewhere between three-fifths and two-thirds are armed robberies. Among the armed robberies specifically, about 60-65% involve a firearm, and the remainder are committed with knives or other weaponry. There appears to have been some increase in the percentage of robberies committed with a firearm. The trend in aggravated assault is similar, having increased approximately three-fold from 1960 to 1978. Proportionally, only a few aggravated assaults are committed with firearms, although this percentage has also apparently risen.

The trend in the suicide rate is also up, although not so sharply. In 1960, there were about 20,000 suicides from all causes, and in 1977, about 30,000. The percentage of suicides committed with firearms also appears to have increased.

As regards fatal firearms accidents, their proportional contribution to total accidental deaths has hovered right around 2% for as long as data have been gathered, with some indication of a modest decline in this proportion over the past several years. Data on non-fatal firearms injuries are highly unreliable, since some (possibly large) fraction of them are presumably never brought to the attention of any cognizant agency, and as a result, published estimates of the annual number of such injuries vary widely. The best data are contained in the annual National Health Survey, and this source suggests

about 170 ± 75 thousand injuries due to firearms accidents in calendar year 1975.

Taking all sources of firearms deaths for the reference year of 1975,[2] we conclude that something on the order of 30,000 deaths occurred as a result of the criminal, accidental, and suicidal uses of firearms. We further estimate, for the same year, that there were approximately 900,000 additional "incidents" where firearms were either present, brandished or fired in criminal incidents, or where firearms were involved in injury-producing accidents, or where firearms were used in attempted suicides, or where firearms were involved in citizen-police encounters. We thus estimate an annual total of roughly one million "gun incidents" -- i.e., incidents where a firearm of some sort was involved in some kind of violent or criminal incident (whether intentional or accidental, whether fatal or not).[3]

Characteristics of Gun Offenders and Victims

What are the characteristics of the perpetrators and victims of these one million annual "incidents"? Young males are by far the most likely victims of accidental firearms violence: among males aged 15 to 24, firearms accidents are the third leading cause of accidental death (after automobile accidents and drowning). Males are also substantially more likely than females to commit suicide with a gun. For firearms crimes, young non-white males are by far the largest offender category. Crimes against property are especially concentrated in the younger age groups, crime against the person (that is, "violent" crimes) less so. Non-whites are greatly over-represented among all categories of offense, but more so for "violent" crimes than for property crimes.

With the exception of homicide and some categories of assault, most criminal incidents involve persons unknown to each other before

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[2]We have chosen 1975 as the reference year in these (and certain other analyses because it is the most recent year for which complete data of high reliability are available. There is some evidence, however, that 1975 represented something of a "high point" (if that is an appropriate term in context) for weapons violence in the United States, and as such, the data summarized here for 1975 may well be misleadingly high as a guess about average levels of weapons violence in a "typical" year.

[3]This summary figure -- one million annual incidents -- is offered as a "best guess" about the approximate order of magnitude of the problem of gun violence in the United States, where "gun violence" is construed very inclusively. It is assuredly not an estimate of the number of chargeable gun crimes committed in a typical year. The general consensus on this latter figure is that there are about 300,000 reported gun-related violent crimes annually.

the event. Robbery is especially likely to involve strangers, assault less so. Interestingly, women are much more likely than men to be assaulted by people they know.

The probability of being victimized by crime varies by socio-demographic characteristics. The highest probabilities are for young males, and the lowest, for elderly women. The probability of suffering injury likewise varies. Again, young males are the highest risk group. Finally, the probability of suffering property loss is also conditioned by social characteristics. The poor are about twice as likely to suffer a property-loss victimization as the more affluent.

The Weapons Used in Crime

What kinds of firearms are used in violent crime? Remarkably, there are no nationally representative data on the topic, with the partial exception of homicide. Evidence from several sources confirms that the handgun is the preferred firearm in most crimes involving firearms (e.g., Brill, 1977). The literature suggests that some 260,000 firearms were confiscated by state and local police in 1971, and of these, about 70% were handguns. Other studies show similar percentages. Thus, handguns predominate among crime guns, whereas shoulder weapons are by far the more common firearm among the larger population. Also, in all studies reporting evidence on the matter, some 70-75% of all crime handguns have barrel lengths of 3 inches or less. Concealability, therefore, is evidently an important factor.

Handguns confiscated and traced are often found to have crossed state lines before having been used in a criminal incident. This flow across jurisdictional lines of firearms into criminal hands tends strongly to vitiate the effects of jurisdiction-specific gun control measures.

Stolen handguns apparently contribute substantially to the supply of crime firearms. Based on 1975 statistics and a few assumptions, we estimate that some 275,000 handguns potentially enter criminal channels each year merely through the theft of guns from private residences. Several studies also confirm that crime guns tend to be "young." About one-half of all handguns confiscated during crimes have been manufactured in the previous five years (Zimring, 1976).

It is a widely held view that much homicide, and criminal violence in general, does not result so much from lethal intent as it does from escalations of otherwise relatively petty quarrels that become lethal or injurious simply because firearms are available. Again, the available research is highly inconclusive. The evidence is firm that attacks with a gun lead to the death of the victim some 2 to 6 times more often than attacks with knives (Zimring, 1968). This might imply that guns are intrinsically more lethal or that people who are intent on bringing death to their victim preferentially choose firearms as the means. Nothing in the literature on homicide allows one to choose

definitively between these possibilities. Indeed, much of the evidence commonly cited on this matter turns out, on closer inspection, not to bear on the question of intent, one way or the other.

Analysis of weapons use in armed robberies tends also to show that robberies committed with firearms are more likely to lead to the death of the victim than robberies committed through other means (Cook, 1976). Since it is plausible to assume that the underlying motive in all robberies is the same (economic gain to the offender), the robbery evidence is thus the strongest in the literature showing that a gun is intrinsically more lethal than other weapons, net of possible differences in underlying motives.

Weapons and Their Control

Evidence from two recent national surveys on public opinion about gun control, and from many previous surveys, shows that large majorities of the public favor measures that would require the registration or licensing of firearms. The public would not favor such measures if their costs were inordinately high, and there is considerable sentiment that any such measure would only be effective were it uniform across all the states. Equally large majorities oppose an outright ban on private handgun ownership, although there is a majority sentiment favoring a ban on the manufacture and sale of cheap, low-quality handguns. Majorities approaching 90% believe they have a constitutional right to own a gun; but majorities also agree that a licensing requirement for handgun ownership would not violate their rights. Although there is a high level of support for registration or licensing measures, no more than about half the population feels that these measures would cause crime to decrease; many measures other than firearms regulations are thought to be more effective towards this end.

The existing firearms control measures in the United States encompass a vast congeries of Federal, state, and local regulations, many of them working at cross-purposes with others. Jurisdictions with extremely restrictive gun control policies often abut jurisdictions with barely any controls at all. This fact, plus the substantial interstate commerce in "crime guns" noted above, make it plain that gun control measures in a single jurisdiction will have no direct or necessary implication for the availability of firearms for illicit criminal purposes in that same jurisdiction.

There is a substantial research literature evaluating the effects of weapons control legislation on violent crime. This literature falls into three broad categories: (i) studies that compare crime rates across jurisdictions (typically, cities or states) with variable weapons control legislation in force; (ii) "process" studies that examine the actual implementation of various gun control measures; and (iii) time-series or before-after studies that follow trends in crime before and after the introduction of new legislative measures.

Studies of the first type (e.g., Geisel, et al., 1969; Murray, 1975) depend critically on the ability of the analyst to model the underlying causes of the crime phenomena in question; this is simply because jurisdictions differ in large numbers of ways, other than in gun control measures on the books, that might plausibly affect crime rates.[4] Conclusions about the impact of firearms controls are thus valid only the to the extent that these "extraneous" factors are identified and held constant in the analysis. And since there is, as yet, no firm theory of crime and how it is produced, none of the studies of this type can be said to provide conclusive evidence, either way, on whether or how firearms controls influence crime rates.

"Process" studies have generally been more informative in that they often point out major gaps between legislation-as-enacted and legislation-as-implemented. Indifferent or hostile implementation of even the most aggressive and well-considered measures will necessarily mitigate legislative effects. Zimring's (1975) analysis of the implementation of the Gun Control Act of 1968, and Beha's (1977) study of the implementation of the Massachusetts Bartley-Fox Amendment, are both excellent examples.

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[4]Persons unfamiliar with the methodology of the social sciences sometimes do not adequately appreciate the nature of this point. For example, it seems perfectly straightforward that a comparison of the crime rate in a jurisdiction with very restrictive weapons policies to the crime rate in a jurisdiction with very loose policies is an adequate measure of the crime-reduction effects of the more restrictive policy. This, however, is not the case. Suppose, for example, that the jurisdiction with the more restrictive policy also had a lower level of poverty. We know from other research that the poverty level of a jurisdiction is strongly related to its crime rate. In this case, we might well find less crime in the jurisdiction with the more restrictive policy -- not, however, because of the restrictive policy, but rather because of its lower poverty level. In short, in this example, we mistake a poverty effect for a weapons-policy effect.

Jurisdictions, of course, differ in all manner of ways other than their poverty levels or extant weapons legislation; many of the ways in which they differ might, like poverty, be a cause of crime. In order to be certain that we are seeing a weapons-policy effect when we compare crime rates across jurisdictions, we must therefore control statistically all these other factors that might be producing the crime rate difference. But we can only hold these "other factors" constant if we know what they are, which in turn means that research of this general sort can only be informative with respect to the effects of weapons legislation on crime if it is based on an adequate theory or "model" of the crime phenomenon being investigated.

In the absence of any opportunities to conduct genuine randomized experiments, perhaps the best hope of uncovering the possible crime-reductive effects of weapons control legislation lies in so-called quasi-experimental, or time-series, research designs, and some research of this sort has been done on various weapons control measures (e.g., Deutsch and Alt, 1977). The general logic of such research is straightforward: some criterion variable (e.g., the violent crime rate) is followed over some extended time period that spans the introduction of a new measure; deflections of the trend line after enactment of this new measure are then taken to indicate the measure's effect.

In principle, "before-after" designs of this sort are very powerful techniques for detecting causal effects. In practice, the potential of these designs has seldom been fully achieved. Crude comparisons of crime rates at two time points (one before, the second after enactment) are, of course, of little or no value, since these comparisons, typically, tell us very little about what we might have expected had the measure not been enacted. Likewise, the timing of post-enactment observations can be critical: the analyst must allow "enough" time for the effects of the measure to show up, but not so much that these effects become diluted beyond the point of detectability. One final problem is similar to the one noted above in the case of cross-sectional studies: in order to take post-enactment deflections of the trend line as a measure of program impact, one must ordinarily be able to say with some degree of confidence what would have happened to the trend line had the measure in question not been enacted, which means that the variables that govern the underlying behavior of the time series have to be discovered and modeled ("held constant") if the impact analysis is to have meaning. So here, too, the absence of an empirically sound theory of crime and how it is produced tends to render the "before-after" literature equally inconclusive.

The best example of problems of the sort just noted concerns the several efforts to evaluate the crime-reductive effects of the Massachusetts Bartley-Fox law. Using a time-series design with monthly observations for roughly ten years, Deutsch and Alt (1977) conclude that the law significantly reduced armed robberies and gun assaults (but not homicide). Hay and McCleary (1979) have questioned the appropriateness of the underlying theoretical assumptions of the Deutsch-Alt time-series model; a respecification of the model and reanalysis of the data failed to reproduce the armed robbery effect. (The effect on gun assault was equally apparent in both analyses.) Thus, depending on certain highly technical assumptions that have almost nothing to do with either guns or crime, but rather with the appropriate statistical model for the analysis of time-series data, one can conclude either that Bartley-Fox reduced the incidence of armed robbery in Boston, or that the bill had no discernible effect on armed robbery in Boston. Which of these is the correct conclusion is yet to be determined.

Summary

The extant literature on weapons, crime, and violence in the United States is extremely inconclusive: some areas have scarcely been researched at all, others have been researched in detail, but the combination of haphazard research designs and small-scale local samples has produced such an array of inconsistency in the published results that nothing of substance can be concluded. Even the most basic descriptive questions, for example, the number of firearms presently in civilian hands, can only be answered to an approximate order of magnitude. Further, the ideological overtones of much of the published research in the area are such as to inspire little confidence in the scientific credibility of the results.

In the best of all possible worlds, one would expect a codified set of principles and body of knowledge to emerge as the final product of a review of the sort just summarized. Obviously, given the relatively primitive state of the literature, any such codification would definitely be premature. In the present case, the final product was instead an agenda for future research in the weapons and crime area. This Research Agenda appears as the final chapter in the report on the literature review, but given its importance in the project as a whole, a brief summary of the Agenda is provided at the end of this report.

IV. The Police Department Survey

Local law enforcement agencies represent an important potential source of information on weapons and crime. The police deal directly with criminal incidents, with persons accused of crimes, with victims of crime and, in many areas, are given the responsibility of administering local weapons regulations. The records generated, maintained and archived by them in their ordinary duties might, therefore, contain the raw ingredients for useful, informative and relatively accurate statistics on firearms and crime. Our survey of the US police was designed to inquire whether this is, in fact, the case. Thus, the purpose of the survey was to investigate whether existing police records would be efficient sources of detailed information about weapons and crime.

The survey centers around two main issues. First, what weapons information are the local police routinely collecting in their current case reports? Secondly, how willing and able would police departments be to process such information into a useful, national-level reporting system?

The survey was based on a sample of 609 local law enforcement agencies, drawn with probabilities proportionate to the size of the department. The survey was a mailout/mailback; nonetheless, a response rate in excess of 70% was attained. Among other topics, we asked respondents to specify what they actually do in the areas of weapons records, report writing and other police procedures concerning weapons, and what more they might be willing to do, if asked, to collect additional information or to prepare specialized reports of their information. Thus, the results speak to the sensibility of a data strategy that would rely heavily on the weapons information in local departmental case reports and on the cooperation of the local police to systematically prepare summary reports.

Results show that local departments are not, on the average, eager to cooperate with additional summary report requests. However, they do not report much resentment against future such requests. Willingness to comply with additional information requests is, in part, a function of the perception of the local police of the seriousness of the weapons and crime problem and police involvement with weapons regulation.

Our survey verifies that the local police see the problem of weapons and crime as a substantial part of their local crime problem, and the more serious they think the problem is, the more willing they are to cooperate with information requests. Seriousness is related to both region and size of department. Departments in the Northeast and North Central regions see less of a problem than do departments in the West and South, and, as expected, larger departments report a more serious problem than smaller departments.

Willingness to provide additional weapons information is also a

function of the number of weapons regulations which the local police administer. The more weapons regulations performed by the local police, the more willing they are, on the average, to provide more summary information.

Most jurisdictions have weapons regulations on the books, and local departments are often involved in their administration. In particular, the local police are most likely to administer any required handgun regulations and to perform any required investigations for firearms permits. Overall, however, the involvement of the local police in weapons regulations is fairly low; on the average, the police perform 3.8 of the 15 weapons regulations specified in our questionnaire. The other regulations are either not in force in the jurisdiction or are administered by some other agency.

The survey analysis shows that many departments are currently recording details about weapons which could provide useful research data. Our survey asked the departments to specify the types of weapon information recorded in the case report in ten different situations where a weapon was involved. We expected that the type of information recorded might vary by situation. However, by their own account, the local police record most of the weapon information in the case report, regardless of situation. The type of firearm, serial number, manufacturer, caliber, prior firearms record of the suspect, and whether the firearm was loaded or fired are recorded in the case report by nearly all local departments. The only two categories of information which are not usually recorded are the value and the age of the firearm. Thus, according to respondents, the individual case reports within local departments provide a potential wealth of detailed information on firearms used in crime.

If this is true, then the problem becomes one of information retrieval. Is the weapons information recorded as part of a narrative account of the crime or incident, or is there a separate section or question with categories where weapons information is recorded? Our analysis of the standard report forms (incident, complaint, arrest, and property forms) actually used by local departments shows that most local departments use forms which facilitate the recording of and retrieval of weapons information to some extent.

Close to half the local departments in our survey use an incident report form with an open space or area labeled "WEAPON." Another third use an incident report form with a special box, code or category that explicitly requests weapon detail. On the report forms that request details, the type of weapon and type of firearm are most likely to be the information requested. Other information (such as caliber, serial number, age) is requested on only half of the incident report forms. An analysis of the standard property report forms shows a similar distribution.

Thus, we find that useful, detailed weapons information is being

recorded by local police and that this information is, for many of the departments, fairly easy to retrieve. It should be noted that, when asked to specify the changes that would be necessary to provide additional summary information about weapons, the most frequent answer is "New forms, or changes in existing forms." This type of change could easily be made, presumably with a small cost.

In addition to recording detailed weapons information, the local police in our survey report that other procedures are also standard when a weapon is involved in a case. All local departments report that a stolen gun is reported to the National Crime Information Center (NCIC) system, and 83% report that a stolen gun would also be reported to a regional or local weapons tracing system. We find that 86% of the local police departments have their own NCIC terminal, with the remaining departments having access to NCIC through another agency. Almost all departments report that every firearm implicated in a crime or found, confiscated or recovered is checked with NCIC. Overall, three-quarters of the local departments rate their experience with NCIC as usually useful. The reported use of the Bureau of Alcohol, Tobacco, and Firearms (BATF) weapons tracing system, in contrast, is very low. Over half of the departments report that firearms are very seldom checked or never checked with BATF, whether involved in a crime situation or found, lost or recovered. Of the departments that reported some use of BATF, only a third rated their experience as useful.

Current summary reporting done by local departments appears to be mainly that required by the Uniform Crime Reports. These reports are filed monthly and annually by local departments and provide some limited amount of weapons information: number of homicides by type of weapon and type of firearm, number of robberies and assaults by type of weapon, and number of arrests for illegal possession and other weapons crimes. However, we also know that additional and much more detailed weapons information is often recorded in the individual case reports. Are the local police currently preparing additional report summaries with more detailed information about weapons? The results suggest not. For example, only about a third prepare summary reports on the number of firearms stolen and on the number of firearms confiscated annually. The local departments that do not prepare summary reports on weapons-related topics indicated, on the average, that the preparation of such reports would be neither easy nor difficult.

The amount of trouble caused by current report summary preparation significantly affects the department's willingness to prepare additional reports. Some local departments (about a quarter to one third) report that report preparation is very burdensome. A similar proportion report that current reports are no trouble at all. The latter are by far the more willing to prepare additional reports.

The level of computerization within the local police departments is one indication of the department's summary reporting capability. To the extent that the arrest and crime reports are computerized, additional

report summaries should be easier to obtain. We find that the trend of computer use by local police has continued. Three-quarters of the local departments have computerized departmental records; in particular, the level of computerized arrest and crime report records is quite high. Forty percent of the departments that use a computer report that they have their own separate computer installation. A separate computer installation within the department is negatively related to the amount of trouble caused by report preparation. This variable is also significantly and positively related to willingness to prepare additional report summaries.

When asked about any changes that would be necessary within their department (such as record-keeping systems, personnel and budget) in order to comply with requests for more detailed weapons information summaries, four out of five report that some amount of change would be necessary. Specifically, changes in existing case report forms would have to be made or new forms introduced. Over half of the departments report that additional funds would have to be sought and special training of personnel conducted.

Our analysis thus shows that the use of existing police records to gather more detailed information about weapons and crime is feasible and potentially fruitful. Many departments currently use report forms which request more weapons information than is found in existing aggregate summary reports, such as the UCR reports. Respondents in local departments are concerned about weapons and crime, and there is some willingness to provide additional information. However, it would probably be necessary to provide some incentives (financial support, computer software, model report forms) to the local police departments to ease the increased burden of reporting. An expansion of the weapons data requested from the police for Uniform Crime Reports, or the addition of a special Weapons Report (similar to the existing "Supplemental Homicide Report"), could prove to be the most efficient method for gathering additional weapons information from the local police. The use of an existing data collection system such as UCR would probably be less costly and better utilized than the establishment of a new organization to gather weapons and crime information.

V. Data from the Los Angeles Superior Court

The acquisition and analysis of Prosecutor's Management Information System (PROMIS) data from Los Angeles was intended to serve two purposes: substantively, to replicate and extend the analysis by Cook and Nagin (1979) of the effects of weapons use on felony case disposition; and procedurally, to assess the general utility of the PROMIS data for subsequent research on issues of weapons and crime.

Concerning the first of these, our analysis assumes that a large number of variables affect case outcomes at each stage, among them the nature and seriousness of the charge, the strength of the evidence, characteristics of the offender, the case load being managed by the prosecutor at the time, the "convictability" of the case, and so on. A unique feature of the PROMIS data is that it contains enough information to allow one to model these various factors and to hold them constant in the analysis. Thus, the estimates of weapons effects are estimates net of these many, potentially confounding, factors.

The major shortcoming of the PROMIS data for research purposes is that the weapon variable is relatively crude. There is, in fact, one and only one weapon variable in the data, with each case scored into one of the following four categories: gun used, other weapon used, no weapon used, or unknown. For the sample of 5,000 felony charges upon which the analysis is based, the distribution on this variable was as follows:

Weapon at Time of Offense	
Gun	13.9%
Other weapon	9.8
No weapon	60.4
Unknown	15.9
	100.0%
	(N = 5,000)

Notice that roughly a sixth of the total have missing data on the weapons variable. Notice further that the data base does not contain many other potentially relevant items about weapons use that might be important in ascertaining the effect of the weapon on case disposition: for example, whether the weapon was fired during the incident, only brandished, or was merely being possessed by the offender at the time; or information on the caliber or type of the weapon; and so on. Given that this information is not available in the data, the analysis is necessarily rather crude.

It is important to emphasize that all the cases considered in the

analysis are felony cases. Most of the weapons use represented in the data is weapons use in the context of committing some other crime; illegal possession or use of firearms charges are rare in the data, constituting only 1.9% of the total offenses. Since the seriousness of the offense is among the variables held constant in our statistical models, we have not attempted to analyze each major crime category separately.

Findings of the analysis, stage by stage, are as follows. First, we find a statistically significant and positive effect for gun use at the stage of initial screening by the Los Angeles District Attorney. That is, holding other relevant variables constant, the probability that the case will be accepted at initial screening is higher if the case involves a gun than if no weapon was used. The effect for "other weapon" on initial screening, however, was insignificant.

Once a case passes through initial screening, it goes to a preliminary hearing, and here, too, we find a positive and statistically significant gun effect. The probability of a case being accepted at the preliminary hearing is notably higher if a gun was used than if no weapon was used. And here, too, the effect for "other weapon" was not significant.

Once the case clears preliminary hearings, it is presented for felony arraignment in Los Angeles Superior Court. At arraignment, the case may be dismissed, or the defendant may plead guilty, or the case may be sent to trial. We find that the probability of a dismissal at the arraignment stage is not significantly affected by either gun use or the use of any other weapon; all estimated coefficients are trivially small in magnitude and not statistically different from zero.

How does weapon use influence whether the case is resolved by guilty plea or continuance to trial at the arraignment stage? We find, at this stage, that gun offenders are <u>less</u> likely to plead guilty than offenders using no weapons at all, regardless of the seriousness of the charges and other offender characteristics.

Thus, in the Los Angeles case, gun offenders (but not other weapons offenders) are more likely to pass through initial screening to a preliminary hearing, more likely to pass from a preliminary hearing to formal arraignment, and more likely to pass from formal arraignment into trial. How are trial outcomes themselves affected by the presence of a weapon in the crime?

Trial outcomes, of course, are of two sorts: first, the finding as to guilt or innocence, and then for the guilty, the sentence received for the crime. Concerning the first, we find no significant gun or other weapon effect.

Felons are judged guilty either by plea or finding; once judged guilty, they may receive a prison or jail sentence or some other sentence

not involving prison (i.e., a suspended sentence, or a sentence to probation rather than prison, etc.). Among felons either pleading or found guilty, the probability of a prison sentence (of any length) is very much higher if a weapon is involved in the crime than if not. Further, for those found guilty and sentenced to prison, the gun effect is again substantial: all else equal, the use of a gun by felons found guilty and sentenced to prison or jail increases the average sentence by about 600 days. The effect is also substantial for felons who plead guilty and are sentenced, amounting to some 450 extra days.

For both guilty pleas and guilty findings, then, it is apparent that substantially stiffer prison sentences are meted out to gun offenders than to offenders using no weapons, even with other potentially relevant factors held constant.

These findings make it clear that the court system in Los Angeles pays considerable attention to the uses of guns in felony offenses: gun offenders are more likely than non-gun offenders to pass through the various filters of the system, are more likely to be incarcerated, and receive, on the average, substantially longer prison terms. All these findings are similar to those reported by Cook and Nagin (1979).

Concerning the more general utility of PROMIS for research on weapons and crime issues, we note the following caveats:

(i) The weapons information currently called for in the PROMIS system is better than nothing, but only slightly so. The data record only whether a gun, other weapon, or no weapon was present in the crime and do not record many other potentially interesting or crucial weapons variables. The research utility of PROMIS data in the area would thus be greatly enhanced were a more detailed question sequence on weapons use added to the information system.

(ii) At present, the accessibility of PROMIS for research is essentially at the discretion of the District Attorney in each jurisdiction. The Los Angeles DA office was extremely helpful and willing to cooperate, but other sites that we approached were not. Gathering up PROMIS data for more than a small handful of sites might therefore be a formidable problem.

(iii) Although PROMIS has now been installed in several dozen jurisdictions, these jurisdictions are widely dispersed across the country, and there is no centralized repository of PROMIS data that would facilitate research access.

(iv) In all jurisdictions, the PROMIS data base is massive. The LA data contain more than 80,000 felony cases in just over a one-year period. Moreover, the data files contain variable-length records and considerable amounts of alphabetic (vs. numerical) information. For these and certain other reasons, the data are rather cumbersome and expensive to analyze, and the purely mechanical problems of the analysis

multiply as the number of jurisdictions in the analysis increases. A comparative analysis along the lines discussed above for a relatively large number of jurisdictions (say, ten or more) would be an immensely complicated and expensive undertaking.

(v) Finally, even assuming all the above problems could be solved, PROMIS data allow one to research only a very limited set of topics: basically, they give a rough distribution of weapons use over crime types, and they allow one to assess the effects of weapons use on case disposition. Each of these is, to be sure, an important topic, but even if both were eventually answered in fine-grained detail, we would still not know much about a large number of other issues that are critical to policy formation in the weapons and crime area.

VI. A Recommended Agenda for Future Weapons Research

Building an information base in any area of public policy requires some attention to three closely related questions: First, What is the nature of the problem at hand and what options for dealing with it are open to us? This first question, in short, concerns the characteristics and magnitude of the problem and the range of open, viable policy alternatives. Assuming a range of possible actions can be imagined, then the second question becomes, What information do we need in order to choose intelligently among the many options open to us? Once we are clear on the information we need to choose among options, then we may turn to the third question, How do we best obtain the information we need?

At the present moment in American political history, there is little or no consensus even on the first of these, much less the second or the third. There is some generalized recognition and agreement that we have a serious "violent crime" problem, but what can or should be done about the problem are matters of much disagreement and political dispute. Some favor additional restrictions on the ownership and use of firearms; some even favor that certain classes of firearms be banned altogether. Others believe, not without justification, that laws of any sort tend to affect only the law-abiding, and that the criminal uses of firearms would therefore be largely untouched by additional weapons regulations. In the same vein, some believe that the widespread availability and ownership of firearms are important causes of criminal violence, whereas the same phenomena are, for others, important crime deterrents. Some believe that general restrictions on private weapons ownership would tend to reduce the available supply of firearms for criminal purposes; others anticipate only that a black market in illegal weaponry would spring up to service the criminal demand. Some feel that the solution to firearms abuse is to keep guns out of the hands of potential abusers; others, that the solution is to mete out stiff and certain punishments once an abuse has occurred. Thus, while there is some consensus that the United States faces a very definite "violent crime" problem, the exact nature and magnitude of that problem, its causes, and the means with which it is most effectively and judiciously handled, are matters of fearsome political dispute.

Given the nature of these disputes, it is apparent that no agenda for research, even if followed diligently and funded generously, will be decisive on the question of what the nation should do about violent crime. Answers to such questions depend more on philosophy and values than on matters of scientific fact. On the other hand, policy issues can be informed by high-quality research, even if seldom decided by it. The intent of the Research Agenda is thus far more descriptive than prescriptive; its aim is to narrow the wide band of misinformation and simple lack of empirical knowledge that tend to surround all the major issues involved in firearms and crime, but assuredly not to show that the nation should go this way or that in dealing with its violent crime problem.

In one way or another, every piece of weapons-and-crime legislation ever enacted or proposed is meant to intervene in some way in the weapons market. As all other markets, the weapons market consists of three major components: supply, distribution, and demand. In the case of the weapons market (and many others), demand can be further differentiated into licit and illicit components.

All policy initiatives in this area can be seen as interventions in one or more of these aspects of the firearms market. The Gun Control Act of 1968, for example, intervenes in the supply by banning the importation of certain classes of weapons, intervenes in the distribution system by requiring Federal licensure of firearms dealers, and intervenes in the demand by outlawing weapons purchases among certain classes of persons (e.g., felons). Even measures such as mandatory sentencing can be construed as an intervention in demand, since the intent of such measures is to raise the cost of using a weapon in the commission of crime (and thus, to lower the criminal "demand").

Given the points just made, it is clear that every conceivable weapons-and-crime policy suggestion would be informed by a sound empirical understanding of the various parts of the firearms market, and the bulk of the proposed Research Agenda is directed towards that end. The proposed researches are intended to fill the gaps in four major areas. First, we propose that research be undertaken to provide an accurate and valid description of the current stock of firearms held by individuals and households, that is, of the characteristics of legitimate firearms demand. Secondly, we are concerned to develop a better understanding of how firearms are circulated, starting with their manufacture or importation to their eventual removal from the stock of privately held firearms, with special attention paid to how the firearms used in crimes of various sorts are acquired and disposed of. Thirdly, we propose that some effort be given to the development of theoretical models of firearms usage in crime. In this connection we suggest that micro-economic models of the decision to engage in crime be examined to see how the use of firearms fits into the structure of anticipated benefits and costs (the "expected utilities") associated with crime choices. Finally, since it seems certain that jurisdictions will continue to experiment with legislative measures to regulate in some way the possession, use, manufacture, or distribution of firearms, or change penalties associated with the criminal use of firearms, several alternative strategies for appropriate monitoring of the implementation of such laws and assessing their effects on gun-related crimes are described.

Measuring the Stock of Firearms Held Privately: A National Household Survey

There is a considerable ambiguity about the size, distribution, and condition of the stock of firearms held by private individuals and households. We thus propose that the National Institute of Justice fund a large-scale national household survey centering around the following topics:

1. An Inventory of Household and Individual Possession and Ownership of Firearms, including firearm type, age, condition, and purchase cost.

2. Purposes for Each Firearm and Frequencies of Use.

3. Acquisition and Disposition of Firearms.

4. Handling and Storage of Firearms: Where kept? How often maintained? Inventory of ammunition? Firearm loaded or unloaded in storage?

5. Lifetime Experiences with Firearms: Has household always had firearms? First experiences with firearms and types of socialization (e.g., military, hunting, target shooting, etc.).

Since considerable skepticism has frequently been expressed about the validity of responses to such surveys, some preparatory technical research ought to be undertaken to test out the validity of responses of critical groups of respondents. For example, special studies of registered owners ought to be undertaken in states with gun registration laws (e.g., Massachusetts), to see whether known and verified gun owners are willing to identify themselves in survey interviews.

The utility of a national firearms survey of the sort proposed here, of course, is not so much that it would bear directly on the potential effects or advisability of one or another policy option, but that it would provide useful, and presently nonexistent, descriptive evidence on the nature, condition, and patterns of use of the nation's private firearms stock.

Describing the Firearms Distribution System

The privately held stock of weapons is replenished and increased by transfers from dealers, and ultimately from manufacturers or from other stocks (e.g., military weapons). Properly to understand the total system of weapons distribution, it is necessary to undertake some special studies of particularly important segments of the system, as follows:

(1) Manufacturers and Importers

One important source of new entries into the total stock of firearms in the United States is the output of manufacturers and the transactions of importers. Since this source consists of a relatively small number of corporate entities who are monitored by Federal agencies, the obtaining of detailed data from them on numbers, types, calibers, prices, and other qualitative features of firearms in their inventories and sold by them should be possible.

(2) Dealers' Transactions

Since there are from 150,000 to 200,000 dealers licensed under the 1968 Gun Control Act, collection of complete data on acquisitions and sales from such sources will likely be expensive and fraught with data quality problems. Since dealers are required to keep records of transactions and to make such records available to ATF, basic data likely exist. Because of the large numbers, it seems sensible to undertake a sampling of dealers and their transactions. Undoubtedly, as in other businesses, considerable size discrepancies exist among dealers with some small proportion of dealers making up the bulk of total transactions; hence, a sampling strategy in which dealers are sampled with probability proportionate to their business volumes would be efficient.

(3) Transfers from Military, Police and Corporate Stocks to Household Stocks

A potentially important source of replenishment for the privately held stock of firearms is the transfer of surplus, outmoded, or inappropriate firearms from the stocks held by the military, police forces, and by corporate bodies (including government agencies as well as corporations). Given the attention to police armament by firearms manufacturers, we can expect that the turnover of police firearms may be an important (if minor) source of additions to the private stock each year.

(4) Special Studies of Transfers into Criminal Possession

Critical to many of the issues in the controversies over weapons and crime policy is a good understanding of how firearms are obtained by persons who commit crimes, that is, the characteristics of the illicit firearms demand. The main source of information about weapons used in connection with crimes is from weapons that are detained or confiscated by the police. We recommend that such studies be continued and enlarged, drawing possibly on data from our police survey about which departments maintain the best records for these purposes. Especially critical would be attempts to obtain information about how and at what period firearms were acquired from the persons from whom the weapons were confiscated.

An alternative to the use of police records to study illicit firearms demand is direct data collection from weapons offenders, or in short, an "offender's survey." A prototype for research of this sort exists in a study by Burr (1977) of weapons felons in the Florida jails. Burr's data are seriously hampered because they generalize only to a single jurisdiction; a replication based on offenders from several jurisdictions (ideally, jurisdictions with variable weapons regulations in force) would be far more informative.

Developing a Differentiated Crime Classification System

The crime classification systems currently in use are based essentially on the criminal codes of our federal government and the fifty states. Despite periodic overhaulings, these criminal codes have been built by accretion with more recently recognized criminal acts added into existing categories. As a consequence, some categories are so gross that they hide within the same rubric acts that are decidedly distinct when looked at behaviorally. For example, an "assault" may vary from an attempted murder to a rough shove, the persons involved may be intimately connected or strangers and be of the same or different sex, the incident might involve a firearm or just the open palm of a hand, and so on. To classify all of these as "assaults" is to obscure essential differences among assaultive acts. In other cases, categories may be so specific that few acts are ever recorded as falling within that classification; for example, the California Criminal Code contains "theft of an avocado" as a distinct crime.

One consequence of the current classification system is to obscure the nature of crime and the use of weaponry in crime. Evidence shows that "violent crime" has risen over the past two decades, but the specific kinds of violence reflected in this trend are not known in any precise sense. While some progress has been made in the development of crime seriousness measures, these overall metrics are difficult to apply to specific events because such measures are often tied to the existing criminal classification system.

We propose that the National Institute of Justice fund attempts to develop a more differentiated criminal classification system that is feasible to use in the field by police and crime investigators and that provides more information on the nature of the criminal acts that have been either reported to the police or observed by them. The purpose of such a crime classification system is <u>not</u> to replace the existing criminal code, but to supplement it by providing richer, multi-dimensional descriptions of criminal acts.

For example, one potentially fruitful direction is to develop a standard set of checklist questions, to be filled in by persons recording an alleged crime, that would provide information on whether and how a weapon was used, on the place where the crime was committed, on the relationship between perpetrator and victim, and so on. At present, the recording of such details is highly variable from one jurisdiction to the next. Obviously, not all questions would pertain to all acts recognized as crimes in criminal codes, but any such device would be useful in providing some critical differentiation among the specific acts that are currently being dumped into such omnibus categories as "theft," "burglary," and "assault." This in turn should help crime researchers to understand more clearly what are trends in crime and to provide policy makers with something more than gross trend data supplemented with dramatic case descriptions.

Mutual Effects of Gun Ownership and Crime

Gun ownership in the United States is claimed to be at least partially influenced by individuals' desires to protect themselves against crime. Some observers have noted that this pattern of arming may have the effect of motivating criminals to arm themselves and to carry arms while committing crimes in which weapons are not intrinsically necessary (e.g., burglary). Others claim that widespread possession of firearms makes it easier for criminals to obtain arms through theft. On the other side, there are claims that widespread gun ownership reduces some types of crimes because criminals are not willing to risk encountering an armed potential victim.

To cast some definitive light from hard evidence on this issue would require time-series data on both crime and weapons ownership that are virtually impossible to obtain. But, it would be worthwhile encouraging researchers to investigate the utility of gun licensing information in states that have had licensing laws over a sufficient period of time, and to relate any trends therein to the crime rates. Especially useful would be licensing data that can be related to smaller areas within states and that are generated by a system that requires frequent renewals. More feasible, if less definitive, are cross-sectional studies which would relate crime rates for political jurisdictions to patterns of gun possession within those areas, assuming good local-area data on gun ownership can be obtained.

The Effects of Gun Control Legislation

It can be anticipated that some states and some local jurisdictions will change their gun control legislation over the next decade. For example, several states have begun to experiment with "mandatory sentencing" policies. These changes present an opportunity to study the effects of gun control legislation on crime rates through interrupted time-series analyses, as in the excellent attempts to study the impact of the Bartley-Fox amendment in Massachusetts. We recommend that similar research be undertaken whenever significant policy changes occur. We further recommend special attention to the implementation and enforcement of any new measures. Accumulation of evidence of high plausibility from several state and local jurisdictions will begin to provide knowledge on what kinds of gun control legislation work with what kinds of jurisdictions and with what effects on which types of crime.

Theoretical Models of the Use of Firearms in Crime

While the use of weapons in crime appears superficially to be so transparently obvious that there may be no good reason to investigate this topic further, more thoughtful consideration suggests that this topic may be of utmost importance. It is clear that policies designed to affect gun-related crimes are based on models of why and how guns are used in crime and more careful thought to such models, as well as

empirical tests, may allow for the formulation of more effective policies.

First of all, while many commentators upon weapons and crime distinguish roughly between assaults, homicides and economically motivated crimes, it is not at all clear that the patterns of firearms use connected with those crimes are different. A model which states that crimes will be committed with guns if guns are accessible is often an extrapolation from the self-evident truth that if there were no guns available, no crimes would be committed with them. It is also a model which implies that whether or not a weapon is used is not so much a matter of calculated costs and benefits as one of convenience. A gun assault in a bar arising out of an altercation occurs only because the assailant carries guns; a street robbery involving a gun also arises out of gun carrying. Note that this model leads to a strategy which attempts to lower the possession or carrying of guns, and is perhaps the basic view underlying the Bartley-Fox amendment in Massachusetts.

Secondly, careful attention has not been given to the anticipated costs and benefits of using weapons in crime, especially those crimes that would appear to have more of a rational basis. Here the issue is, say, why would a burglar carry a gun? The structure of anticipated costs and benefits include considerations of the following sort: How much is the anticipated gain from the crime affected by the use of a gun? How much is the risk of apprehension lowered by the carrying of a weapon? Will armed robbers be more successful at escaping from the scene of a crime than those who use strong-arm methods? Finally, does the possession of a gun and its use (or threat of use) in a crime increase the expected punishment if apprehended.

These issues cannot be settled easily. The best we can recommend at this point is that the National Institute fund basic research that attempts to model the commission of gun crimes. Some attention ought to be paid to the problem of differentiating among types of crime, especially those involving injuries to persons and those from which some economic gain can be reaped. Secondly, models should be constructed which attempt to conceptualize the costs and benefits to be derived from the use of weapons on a variety of types of crime.

VII. Recommendations

Although we stated in the Foreword that we do not intend to make recommendations to policy makers or criminal justice agencies about weapons and crime policy, we do have recommendations that deal with policy on a somewhat more specific research level and whose adoption, we believe, would strengthen our understanding of the role of firearms in crime. The recommendations primarily concern the data generated at various points in the criminal justice systems and how it could be improved.

Policy Recommendations for Police Departments

Local police departments constitute the ultimate source of data on the use of firearms in the commission of crimes. As our survey of police departments reveals, most departments record highly differentiated data on weapons, but because this information is not collected in a uniform way nor stored in an easily retrievable form, it is not currently available either for operational or research purposes. We recommend that police departments establish uniform data recording procedures for every crime reported to the police that would establish the presence or absence of weapons at the commission of a crime, whether the weapon was used, how used, type of weapon, and disposition of the weapon. All such information is currently collected by most police departments but often stored in the body of a narrative report from which it is difficult to retrieve any specific items of information. Checklists incorporated into current reports that lend themselves easily to conversion into machine readable records are the obvious implementation of this recommendation.

Policy Recommendations for Court Systems

Although the fairly widespread adoption of the PROMIS system (and similar machine readable court data systems) has made it possible to develop a better understanding of how the courts process arrests, the data systems are still somewhat insensitive to issues arising around the role of weapons in crime. As noted earlier, the Los Angeles system enters into each arrest record whether or not a weapon was present in the offense upon which the arrest was based. Since this information in turn is transferred from the arrest records filed by the Los Angeles police, it can be no better nor more revealing than the data forwarded by the arresting authorities. Hence, the PROMIS system's crudity reflects in part the problems in police department data bases referred to above. But, to the extent that more specific data are available in arrest charges, the PROMIS data base certainly should reflect it. Furthermore, given the sensitivity that court processing shows to the use of a weapon (as our analyses reveal), arrest processing might also be facilitated by more specific and richer data on the presence of weapons (especially firearms) and their use in specific ways in the commission of crimes.

We thus recommend that the PROMIS data systems be modified to record at least the following information: First, the data should differentiate between the mere possession of a weapon and its use in an act resulting in an arrest charge. Secondly, more specific information should be obtained about the weapons themselves, i.e., whether long gun or handgun, and perhaps even more detail on caliber, barrel length, and other weapons characteristics. Thirdly, the results of weapons checks through the BATF or NCIC systems should also be entered in the PROMIS data base. Fourth, PROMIS should note any special "enhancements" being carried with the main charge; for example, sentencing enhancements due to previous convictions on the same charge, or enhancements due to weapons use. Finally, the charge with which the weapon is associated ought also to be entered. At the present time there is no way to connect the weapons information on the file with the specific charge (or charges) with which the weapons presence is associated.

Policy Recommendations for Congress and State Legislatures

Our recommendations to legislative bodies do not take the form of guidance about which, if any, laws ought to be passed, as we have no expertise in this topic. Our recommendations, rather, concern steps that should be taken before any measure is enacted, no matter what its specific form or content. And our recommendations in this regard can be quickly summarized: First, be explicit about the underlying assumptions upon which the proposed measures are based; and secondly, to the extent possible, be sure these assumptions are plausible in light of current evidence and research.

Any attempt to control crime through controlling firearms is based on assumptions and presuppositions about how weapons are acquired, distributed, and used. At present, knowledge about these topics is highly limited, although it is transparently obvious that the existing distribution system is quite complex and multi-faceted, and thus, that simple-minded interventions in the system are readily circumvented. For example, controls achieved by regulations of commercial gun dealers can be easily bypassed by relying on the more informal "swaps" or barter market in firearms, which is extensive. In like fashion, the 1968 Gun Control Act ban on cheap, foreign-made handguns was circumvented by importing unrestricted parts and assembling them into firearms domestically.

Common-sense definitions are often difficult or impossible to translate into specific policy guidelines or are noxious to implement in practice. For example, many current policy proposals are to the effect of limiting or banning outright so-called "Saturday Nite Specials." Such proposals overlook that "Saturday Nite Special" is almost impossible to define with sufficient clarity that the definition is useful for policy purposes (Cook, 1979). Such proposals are also based on two additional assumptions that have not been adequately researched: (i) that the Saturday Nite Special is the preferred firearm

for criminal purposes (it is still an open question whether the proportion of SNS's among "crime guns" is any different than the proportion among legitimate handguns owned by the population at large); and (ii) that in the absence of SNS's, that is, lacking access to cheap low-caliber handguns, criminals would "drop down" to some less lethal weapon: for example, a knife. Nothing in the existing literature, however, rules out the possibility that they would "go up" to substantially more lethal weapons; for example, to higher-quality, higher-caliber handguns, instead, in which case the overall effect might well be a sharp increase in the death resulting from criminal violence.

Other policies either currently in force or recently proposed seek to forbid the sale of firearms to certain classes of persons. If these "classes" cannot be easily defined, then such measures provide only rhetorical security at best. For example, a ban on sales to "the mentally ill" supposes that there is an agreed-upon definition of mental illness, which there is not. Further, even if there were, the "mental illness" of applicants to purchase weapons could only be reliably ascertained at an awesome social expense; for example, through extensive, detailed psychological testing of each applicant. There may be very good reasons to keep firearms out of the hands of the mentally ill, but if "mental illness" cannot be precisely defined and cheaply and routinely detected, then the possibilities of actually implementing such a ban are extremely limited, and enactment in the face of such difficulties only invites widespread abuse and discretionary or inequitable enforcement.

For good and obvious reasons, policy makers are concerned to develop "interventions" that somehow influence the criminal market for firearms but do not infringe on the rights of legitimate firearms owners. Again, this is a laudable goal, but it presupposes that these two parts of the market are sufficiently distinct that policy efforts can be focused, somehow, on the one but not the other. There is nothing in the literature suggesting this to be the case, with the exception that the proportion of handguns among "crime guns" is higher than the equivalent proportion among the general private firearms stock. Policy makers should thus be aware that any action taken to deny firearms to would-be criminals will necessarily deny them to a vastly larger group of persons who will never even contemplate, much less commit, a violent criminal act. This, of course, is not to argue that such actions should not be undertaken, which is an entirely separate matter. It is to argue that infringements on access to guns by legitimate firearms consumers is one, among many, costs of a firearms regulation policy, and one which must, therefore, be weighed against the anticipated benefits before a rational policy decision can be made.

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